



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,704	01/02/2002	Tynan George Roach	82053-0081	5406
24633	7590	11/30/2005		
HOGAN & HARTSON LLP IP GROUP, COLUMBIA SQUARE 555 THIRTEENTH STREET, N.W. WASHINGTON, DC 20004			EXAMINER GEREZGIHER, YEMANE M	
			ART UNIT 2144	PAPER NUMBER

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/032,704	Applicant(s) ROACH, TYNAN GEORGE	
	Examiner Yemane M. Gerezgiher	Art Unit 2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,7,8,10-19,22-26,28 and 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7,8,10-19,22-26,28 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The response received on 09/06/2005 has been entered. Claims 1-4, 7, 8, 10-19, 22-26, 28 and 29 remain pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 7, 8, 10-19, 22-26, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schweitzer et al. (U.S. Patent Number 6418,467) hereinafter referred to as Schweitzer in view of Coons et al. (U.S. Patent Number 6,832,250) hereinafter referred to as Coons.

As per Claims 1 and 16, Schweitzer teaches a network accounting and billing method and architecture for combining usage data from a plurality of network elements to generate usage records for network service providers ([front end network components including ISPs and enterprise network operators] Column 3, Lines 20 - 33; Figure 1) comprising:

collecting usage event data records from network elements ([Gatherers collect network session data] Abstract, Column 3, Lines 34 - 36; Column 5, Lines 28 - 34; Column 6, Lines 50 - 54; Column 61 - 64; Figure 1, #161),

Art Unit: 2144

associating with each event data record a key module (index) identifying usage event data as pertaining to a particular usage session ([indexed table associated with session usage records], Column 9, Lines 23 - 36, Lines 47 - 48)

converting usage event data records into a normalized format ([Gatherers normalize the data] Column 7, Lines 1 - 3),

aggregating normalized usage event data records to form usage detail records (Column 7, Lines 3 - 12) to form usage based records wherein the normalized format includes a key module (index) and usage data of a known length (Total Bytes) such to be used to associate normalized records from related events pertaining to a usage session ([record-flows can be indexed before updating the database, and records pertaining to usage sessions] Column 9, Lines 31 - 36, Lines 47 - 63.); the aggregating step is coordinated by the Central Event Manager (Column 7, Lines 3 - 5; Column 8, Lines 17 - 20; Figure 1, #170) such that method is computer implemented (Column 8, Lines 46 - 57) whereby data records are stored in the central database (Column 8, Lines 30 - 31; Figure #175) comprising indexed table (Column 9, Lines 9 - 14) such that normalized usage event data records are located on table files (Column 9, Lines 23 - 36, Lines 47 - 48.), and

exchanging usage records with downstream elements by converting usage records into a data output format and distributing output data to downstream elements ([data is stored in the central database as a billing record or is sent directly to an external system or sent to down stream/backend

Art Unit: 2144

systems for filtering/aggregation] Column 9, Lines 3 - 8; Column 10, Lines 26 - 39; Figure 2.)

Schweitzer substantially discloses the invention as claimed.

However, Schweitzer was silent about the use of a hash table having therein a key module (a hash key) in connection with the usage based records/page files.

However, as evidenced by the teachings of Coons, a method and system of generating a usage based billing and management by collecting and aggregating raw data concerning a communication session usage (title and abstract); and further making use of a hash table having therein a key module (a hash key) in connection with the usage based records/page files was known at the time the invention was made. See Coons Column 7, Lines 59-61, Column 5, Lines 13-18, Column 4, Lines 57-65 and Column 3, Lines 2-7. Thus, it is respectfully submitted that it would have been obvious to one of ordinary skill in the art at the time the invention was made to take the teachings of Coons related to the a hash table (hashing) in relation to usage-based billing records and have modified the teachings of Schweitzer, because a hash table is known to increases efficiency when searching for a record in a large array of records by directly locating a specific session record using an index key (hashed key/"key module") at an average time of $O(1)$, or a constant time.

As per Claims 2, 3 and 23, Schweitzer teaches a network accounting and billing method as described above further comprising identifying a collection mechanism of a network element selected from polling and spooling (visual representation of enhancements can be provided to the NSP and applied to field before storing in database), using the collection mechanism to collect event data records ([Data Enhancement provides enhancement features to data to complete Gathered information] Column 10, Lines 42 - 44; Column 12, Lines 36 - 41; Column 11, Lines 9 18, Lines 25 - 28; Column 6, Lines 39 - 44.)

As per Claims 4 and 24, Schweitzer teaches a network accounting and billing method as described above further comprising validating the usage event data records after they are collected and before they are converted into a normalized format ([during the merge process the Central Event Manager {Figure 1, #170} identifies and discards duplications, enhancing the efficiency of the data repository] Column 9, Lines 23 - 31.)

As per Claims 7 and 25, Schweitzer teaches a network accounting and billing method as described above wherein aggregating normalized data records includes augmenting usage data with external data ([aggregating data onto the record-flows as they are collect in real-time] Column 7, Lines 18 - 21; Lines 35 - 42.)

As per Claim 8, Schweitzer teaches a network accounting and billing method as described above in Claim 1 wherein aggregating normalized usage data includes applying a predefined rating criteria to usage records prior to exchanging usage records (Column 12, Lines 37 - 43.)

As per Claims 10 - 14, Schweitzer teaches a network accounting and billing method as described above in Claim 1 wherein aggregating step is performed by a data processing engine of a core mediation component (Central Event Manager, Figure 1, #170) such that method is computer implemented (Column 8, Lines 46 - 57) permitting users to access core administrative functionalities whereby core component may be used with any type of network element and downstream element through identified output protocols (Column 8, Lines 10 - 34, Column 5, Lines 29 - 35, Lines 44 - 47.)

As per Claim 15, Schweitzer teaches a network accounting and billing method as described above in Claim 1 wherein exchanging usage detail records comprises identifying with each of the downstream elements an output format and protocol, such to convert the usage records into output format and distribute output usage detail records to downstream element through the output protocol ([Information Source Modules act as interface between Gatherers and network devices] Column 5, Lines 29 - 46; Figure 1, #110.)

As per Claim 17, Schweitzer teaches a network accounting and billing system as described above wherein core mediation component comprises multiple server machines running in parallel to allow for efficient processing of multiple data input streams from one or more front end components ([Central Event Manager coordinates the operation of the Gatherers and manages the flow of data through the system] Column 8, Lines 16 - 23; Column 6, Lines 57 - 60; Figure 1, #161, #162, #163, #164, #165.)

As per Claim 18, Schweitzer teaches a network accounting and billing system as described above wherein front-end components operate in parallel with a single core mediation component to speed the collection and conversion of usage. Event data records ([User Interface Server allows multiple clients to access Core System] Column 10, Lines 2 -10; Figure 1, #180.)

As per Claim 19, Schweitzer teaches a network accounting and billing system as described above wherein system components exchange information using a normalized file format ([Central Database stores data collected by Gatherers which has passed through Central Event Manager to normalize data] Column 9, Lines 3 - 8, Lines 23 - 28, Lines 47 - 48; Column 6, Lines 61 - 64; Figure 1, #161, #170, #175.)

As per Claim 22, Schweitzer teaches a network accounting and billing system as described above wherein the Central Event Manager (Column 8, Lines 10 - 13; Figure 1, #170) collects usage event data by using a pre-defined collection mechanism for each of the network elements ([data collection scheme defined in - the system configuration] Column 8, Lines 14 - 23.)

As per Claim 26, Schweitzer teaches a network accounting and billing method as described above wherein the Central Event Manager (Figure 1, #170) applies a predefined rating criteria to usage records ([merge specifies how duplicate records are handled] Column 14, Lines 41 - 44; Lines 19 - 22.)

As per Claim 28, Schweitzer teaches a network accounting and billing method as described above wherein the Central Event Manager (Figure 1, #170) interfaces with the user interface server (Figure 1, #185) such to permit a user access to core administrative functionalities whereby core component may be used with any type of network and downstream element ([Central Event Manager manages flow of data through the system] Column 8, Lines 10 - 13, Figure 1.)

As per Claim 29, Schweitzer teaches a network accounting and billing method as described above wherein the Central Event Manager (Figure 1, #170) administrative functionalities are selected from the group consisting of user

interface, report generation, database control and task management (Column 8, Lines 16 - 23; Figure 1.)

Response to Arguments

4. Applicant's arguments with respect to claims 1 and 16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. **Spencer** et al. (U.S. Patent Number 5,197,002) entitled: "Methods and Apparatus for Dynamic Hashing". Spencer discloses a dynamic hashing in combination with processing of usage based billing records. See Abstract, Column 2, Line 45 through Column 3, Line 22.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yemane M. Gerezgiher whose telephone number is (571) 272-3927. The examiner can normally be reached on 9:00 AM - 6:00 PM Mon - Fri.

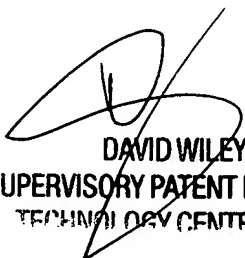
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached at (571) 272-3923. The fax

Art Unit: 2144

phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yemane M. Gerezgifier
Patent Examiner, Computer Science



DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNICAL CENTER 2100